

II. NONTECHNICAL ABSTRACT

We have investigated the possibility of transferring genes into tumor cells within the body. These genes change the tumor so that it becomes sensitive to a type of chemotherapy that is not toxic to normal parts of the body. These changes may also make the tumor more visible to the immune system. The gene we have selected is the Herpes Simplex-thymidine kinase (HStk) gene, one of many genes contained within the Herpes Simplex Virus. The Herpes simplex virus can be killed by a drug called Ganciclovir (GCV). By transferring the HStk gene into the tumor, using a disabled mouse virus called a vector, we can convert the tumor to be genetically like a herpes virus. The HStk-containing tumor can now be killed with GCV.

We have conducted experiments in mice with cancer cells growing throughout their abdomens. The direct injection of mouse cells producing HStk vectors into these mice, can eliminate all evidence of tumor growth. We now propose a trial for patients with ovarian cancer who have failed standard therapies. Patients will undergo surgery to place a plastic catheter into the abdomen and then receive an injection of HStk vector producing cells into the abdomen through the catheter. The patients will receive GCV by intravenous infusion for 2 weeks after the injection of the vector producing cells. Response to therapy will be assessed by X-ray studies and looking into the abdomen with a scope.